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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 1 of 3

	Complete if Known
Application Number	10/776,076
	February 10, 2004
First Named Inventor	Madhav Datta
Art Unit	2813
Examiner Name	Thanhha S. Pham
Attorney Docket Number	42P11468D

U.S. PATENT DOCUMENTS							
Examiner Initials*	Cite No.'	Document Number Number - Kind Code ² (if known)	Publication Date or issue Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear		
TSP		US-3,663,184	05-16-1972	Wood, John R., et al.			
		US-4,290,079	09-15-1981	Carpenter, Charles., et al.			
		US-4,360,142	11-23-1982	Carpenter, Charles., et al.			
		US-4,505,029	03-19-1985	Owyang, King et al.			
		US-5,648,686	07-15-1997	Hirano, Naohiko et al.			
		US-5,736,456	04-07-1998	Akram, S.			
		US-5,773,359	06-30-1998	Mitchell, Douglas G., et al.			
		US-5,885,891	03-23-1999	Miyata, Masahiro, et al.			
		US-6,111,321	08-29-2000	Agarwala, Birendra N.			
		US-6,222,279	04-24-2001	Mis. Joseph D., et al.			
		US-6,224,690	05-01-2001	Andricacos, Panayotis C., et al.			
		US-6,232,212	05-15-2001	Degani, Yinon et al.			
		US-6,348,730	02-19-2001	Yi, Sang-Don et al.			
		US-6,426,282	07-30-2002	Saigal, Dinesh, et al.			
		US-6,489,229	12-03-2002	Sheridan, Devin R., et al.			
7		US-5,903,058	05-11-1999	Akram Salman			
		US-6,495,449	12-17-2002	Nguyen, Tue			
		US-6,130,170	10-10-2000				
V		US-5,384,283	01-24-1995				
TSP		US-5,492,235	02-10-1996	Crafts et al.			

-	FOREIGN PATENT DOCUMENTS						
Examiner	Cite	Foreign Patent Document	D 41'1' D-1-		Pages, Columns, Unes,		
Initials*	No.	Country Code - Number - Kind Code (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Where Relevant Passages or Relevant Figures Appear		
750		JP-2001189334	07-10-2001	RI, Soton, et al.			
							
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Examiner Date Considered 7/8/05					
Digitatore	ı	Examiner Signature		7/8/05	

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STATEMENT BY APPLICANT

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Sheet 2 of 3

	Complete if Known
Application Number	10/776,076
Filing Date	February 10, 2004
First Named Inventor	Madhay Datta
Art Unit	2813
Examiner Name	Thanhha S. Pham
Attorney Docket Number	42P11468D

			U.S. PATE	ENT DOCUMENTS		
Examiner Cita				Name of Patentee or Applicant of Cited Document	Pages, Columns, Unes, Where Relevant Passages or Relevant Figures Appear	
78		US-6,313,651	11-06-2001	Hembree et al.		
	l	US-5,137,845	08-11-1992			
$\neg \vdash$		US-5,376,584	12-27-1994	Agarwala, Birendra N.		
1		US-6,387,793	05-14-2002	Yap et al.		
TOP		US-4,880,708	11-14-1989	Sharma et al.		
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	FOREIGN PATENT DOCUMENTS								
Examiner	Cite	Foreign Patent Document	Publication Date	Name of Patentee or	Pages, Columns, Lines, Where Relevant Passages	T.			
Initials*	No.	Country Code - Number - Kind Code (if known)	MM-DO-YYYY	Applicant of Cited Document	or Relevant Figures Appear	<u> </u>			
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STATEMENT BY APPLICANT			ANT	First Named Inventor	Madhav Datta	
				Art Unit	2813	
				Examiner Name	Thanhha S. Pham	
Sheet	3	of	3	Attorney Docket Number	42P11468D	_

NON PATENT LITERATURE DOCUMENTS						
Cite No.¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T²				
	"Chromium Copper Step Phasing", IBM Technical Disclosure Bulletin, (08/01/1977), pgs. 1005-1006					
/	TUMMALA, RAO et al., "Microelectronics Packaging Handbook, Semiconductor Packaging", Part 2, 2nd Edition, (1997), pgs. 432-139					
	Annala, P., et al., "Electroplated Solder Alloys for Flip Chip Interconnections", Physica Scripta, T69, pp. 115-118 (1997)					
	Datta, M., et al. "Electrochemical Fabrication of Mechanically Robust PbSn C4 Interconnection", Journal of the Electrochemical Society, 142 (11), 7 p., (Nov 1995)					
	Honma, S., et al. "Effectiveness of Thin-Film Barrier Metals for Eutectic Solder Bumps", Microelectronics International, 14 (3), pp. 47-50 (Sept. 1997)					
	Liu, C.Y., et al., "Electron microscopy study of interfacial reaction between eutectic SnPb and Cu/Ni (v)/A1 thin film metallization", Journal of Applied Physics, 86 (1), pp. 1-5 (Dec.	154	}			
	•					
		Cite No.¹ Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, megazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. "Chromium Copper Step Phasing", IBM Technical Disclosure Bulletin, (08/01/1977), pgs. 1005-1006 TUMMALA, RAO et al., "Microelectronics Packaging Handbook, Semiconductor Packaging", Part 2, 2nd Edition, (1997), pgs. 132-139 Annala, P., et al., "Electroplated Solder Alloys for Flip Chip Interconnections", Physica Scripta, T69, pp. 115-118 (1997) Datta, M., et al. "Electrochemical Fabrication of Mechanically Robust PbSn C4 Interconnection", Journal of the Electrochemical Society, 142 (11), 7 p., (Nov 1995) Honma, S., et al. "Effectiveness of Thin-Film Barrier Metals for Eutectic Solder Bumps", Microelectronics International, 14 (3), pp. 47-50 (Sept. 1997) Liu, C.Y., et al., "Electron microscopy study of interfacial reaction between systems of the country of the properties of the country of the co	Cite No.' Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial problems), publisher, city and/or country where published. "Chromium Copper Step Phasing", IBM Technical Disclosure Bulletin, (08/01/1977), pgs. 1005-1006 TUMMALA, RAO et al., "Microelectronics Packaging Handbook, Semiconductor Packaging", Part 2, 2nd Edition, (1997), pgs. 132-139 Annala, P., et al., "Electroplated Solder Alloys for Flip Chip Interconnections", Physica Scripta, T69, pp. 115-118 (1997) Datta, M., et al. "Electrochemical Fabrication of Mechanically Robust PbSn C4 Interconnection", Journal of the Electrochemical Society, 142 (11), 7 p., (Nov 1995) Honma, S., et al. "Effectiveness of Thin-Film Barrier Metals for Eutectic Solder Bumps", Microelectronics International, 14 (3), pp. 47-50 (Sept. 1997) Liu, C.Y., et al., "Electron microscopy study of interfacial reaction between systems, 24 and Cu/Ni (v)/A1 thin film metallization", Journal of Applied Physics, 86 (1), pp. 1-5 (Dec.)			

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